CLAIMS

1. A method for fabricating a belt for use in chemical mechanical planarization (CMP), comprising:

forming a belt-shaped mesh;

providing a mold configured to form a belt-shaped structure;

positioning the belt-shaped mesh into the mold; and

forming a polymeric material in the mold, the polymeric material being formed around and through the belt-shaped mesh such that the belt-shaped mesh is encased in the polymeric material.

2. The method of claim 1, further comprising:

curing the polymeric material,

wherein the polymeric material solidifies to form the belt for use in CMP having a polymeric processing surface encasing a mesh inner core.

3. The method of claim 2, wherein the forming of the belt-shaped mesh includes constructing a grid of intersecting members, the intersecting members being fixed at intersecting joints.

4. The method of claim 3, wherein the grid of intersecting members includes discontinuities in the grid forming openings through which optical transmissions can pass through the belt-shaped mesh.

5. The method of claim 4, further comprising thinning the polymeric material in a region of the belt for use in CMP at the openings through which optical transmissions can pass through the belt-shaped mesh.

6. The method of claim 2, wherein the belt-shaped mesh is formed of stainless steel.

7. The method of claim 2, wherein the polymeric material includes polyurethane, polyester, PVC, polyacrylate, and epoxy.

8. The method of claim 2, further comprising:

curing the polymeric material, the polymeric material being a first polymeric material; and

defining a processing surface over the first polymeric material, the processing surface being defined of a second polymeric material cast over the first polymeric material.

9. The method of claim 2, further comprising:

curing the polymeric material, the polymeric material being a first polymeric material;

defining a cushioning layer over the first polymeric material; and

defining a processing surface layer over the first polymeric layer, the processing surface layer being defined of a second polymeric material.

10. A method for fabricating a pad for use in chemical mechanical planarization (CMP), comprising:

providing a mold;

forming a first polymeric material in the mold;

curing the first polymeric material;

forming a mesh;

positioning the mesh against an interior surface of the polymeric material; and

applying a second material around and through the mesh such that the mesh is encased between the first polymeric material and the second material.

11. The method of claim 10, wherein forming the first polymeric material in the mold defines a polishing surface.

12. The method of claim 10, wherein the first polymeric material is comprised of a plurality of layers, the plurality of layers defining differing hardness layers in the pad for use in CMP.

13. The method of claim 10, wherein the first polymeric material and the second material are capable of being chemically bonded together.

14 The method of claim 10, wherein the first polymeric material and the second material are capable of being bonded together by one of pressing, application of adhesive, and heat curing.

15. The method of claim 10, further comprising;

removing portions the first polymeric material, supporting mesh, and the second material in order to provide a void through which optical transmissions can pass.

16. A method for fabricating a pad for use in chemical mechanical planarization (CMP), comprising:

providing a supporting mesh;

providing a first polymeric material over the supporting mesh;

providing a second material such that the mesh is encased between the first polymeric material and the second material; and

bonding together the first polymeric material, the supporting mesh, and the second material.

17. The method of claim 16, wherein the first polymeric material defines a polishing surface.

18. The method of claim 16, wherein the bonding may be one of chemical bonding, pressing, application of adhesive, and heat curing.

19. The method of claim 16, wherein the bonding together of the first polymeric material, the supporting mesh, and the second material forms a continuous loop.

20. The method of claim 15, further comprising;

removing portions the first polymeric material, the supporting mesh, and the second material in order to provide a void through which optical transmissions can pass.